



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/512,262	02/24/2000	Hiroaki Sudo	JEL 31024	5961
7590	04/12/2005		EXAMINER	
James E Ledbetter Stevens Davis Miller & Mosher LLP 1615 L Street Suite 850 Washington, DC 20036			JAGANNATHAN, MELANIE	
			ART UNIT	PAPER NUMBER
			2666	

DATE MAILED: 04/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

U

Office Action Summary	Application No. 09/512,262	Applicant(s) SUDO, HIROAKI	
	Examiner Melanie Jagannathan	Art Unit 2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-35 and 37-43 is/are rejected.
- 7) ☒ Claim(s) 36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because Figure 1 is missing from application. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. Figures 1-3A should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not

Art Unit: 2666

accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 22-27, 31-34, 37, 39-42 are rejected under 35 U.S.C. 102(e) as being anticipated by Pollack et al. US 6,192,026.

Regarding claims 22-23, 39-40, the claimed OFDM method and transmission apparatus, providing transmission period in which communication control information and user data are transmitted at same time, comprising OFDM signal former that allocates the same communication control information to each of specific subcarriers of OFDM signal and user data to subcarriers of OFDM signal other than specific subcarriers is disclosed by request access OFDM burst with the division of tones of RA burst (Figure 7, element 404) into five channels. The data communication devices submit their request access bursts during a predefined, regularly reoccurring time period called the request access slot. See column 2, lines 28-45. The tones are divided into 5 mutually exclusive subsets and tones that are not assigned to a given RA channel are not energized by the device using that channel. The tones associated with each

Art Unit: 2666

channel are made up of data tones and training tones (element 602), the training tones are spaced at constant intervals amongst data tones. The claimed transmitter that transmits the OFDM signal formed is disclosed by data communication devices (Figure 2, element 202) and access points (element 204) employing an OFDM radio modem to receive and transmit over network frequency spectrum allocated for wireless network. See column 5, lines 13-29, column 7, lines 2-65, column 8, lines 17-26, lines 65-67, column 9, and lines 1-46.

Regarding claims 24, 41, the claimed communication control information includes packet signal is disclosed by OFDM wireless network.

Regarding claims 25-26, the claimed communication terminal and base station apparatus comprising OFDM transmission apparatus is disclosed by data communication devices (Figure 2, element 202) and access points (element 204) employing an OFDM radio modem to receive and transmit over network frequency spectrum allocated for wireless network.

Regarding claims 27, 34, 37, 42, the claimed reception method and receiver that receives OFDM signal formed as claimed in claim 22 is disclosed by access point (element 204) receiving request access burst. The claimed extractor that extracts the communication control information from one of the specific subcarriers of received OFDM signal and the claimed determiner that determines based on reception levels of the specific subcarriers, from which specific subcarrier the control information is extracted for use is disclosed by when data communication devices contact access point it responds with timing adjustment command in order to solve problem of overlapping messages from devices arriving at access point so as to set aside transmissions from devices that have not adjusted their timing. Additionally, guard time can be used with RA bursts to accommodate the range uncertainty. After request access burst, access point processes burst

Art Unit: 2666

and uses set of training tones to estimate a channel response and this is applied to set of data tones for recovery of data bits. See column 7, lines 44-59, column 8, lines 52-64, column 9, and lines 9-46.

Regarding claim 31, the claimed communication control information includes packet signal is disclosed by OFDM wireless network.

Regarding claims 32-33, the claimed communication terminal and base station apparatus comprising OFDM transmission apparatus is disclosed by data communication devices (Figure 2, element 202) and access points (element 204) employing an OFDM radio modem to receive and transmit over network frequency spectrum allocated for wireless network.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 28-30, 35, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pollack et al. US in view of Seki et al. US 5,771,224.

Regarding claims 28-29, 35, 43, Pollack et al. discloses control information allocated to first subcarrier of angular frequency 0 and a second subcarrier different from first within OFDM signal. See column 5, lines 13-29, column 7, lines 2-65, column 8, lines 17-26, lines 65-67, column 9, and lines 1-46.

Pollack et al. does not disclose a determiner comparing reception levels of first and second subcarriers and selects one having the higher reception level as specific subcarrier from which communication control information is extracted, the reception levels of first and second subcarriers are averages computed by an averager.

Seki et al. discloses reference symbol error detector (element 28) where a comparison is made between received reference symbols and reference symbol generator (element 29) to detect errors of each carrier to send to equalizer and also a QPSK symbol error detector (element 32) to detect offsets of each QPSK information symbol from output from equalizer and a correction circuit corrects any error and OFDM receiver with QPSK error detector (Figure 10, element 61) to detect phase variations and these are fed into averaging circuit (element 62). See column 10, column 14, and lines 16-45.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify Pollack et al. with error detector of Seki et al. One of ordinary skill in the art would be motivated to do so for detection of variations in amplitude and phase due to fading. See column 10, lines 12-20, and lines 56-67.

Regarding claim 30, Pollack et al. discloses OFDM reception apparatus as claimed. However, Pollack et al. does not disclose extractor comprising DC offset detector that averages reception signals of first subcarrier, after Fourier transform processing, over a selected period to detect DC offset, a storage that stores the detected DC offset, and subtractor that subtracts stored DC offset from a reception signal.

Seki et al. disclose OFDM receiver with FFT (Figure 10, element 24), QPSK error detector (element 61) to detect phase variations and these are fed into averaging circuit (element

Allowable Subject Matter

8. Claim 36 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Prior art of record does not disclose, in single or in combination, determiner with first comparator for comparing reception level of first and second subcarriers, second comparator for comparing difference in reception level between first and second subcarriers to a predetermined value, determiner determines important information carried by second subcarrier as important information if difference is smaller than predetermined value in combination with other limitations of claim.

Response to Arguments

9. Applicant's arguments filed 1/24/2005 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues Seki et al. does not disclose transmitting both communication control information and user data at the same time on separate carriers of an OFDM signal. In response to applicant's arguments, the recitation has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Additionally, Examiner has submitted new grounds of rejection in Pollack et al. and maintains

Art Unit: 2666

Pollack et al. disclose above limitation. Examiner contends the data communication devices submit their request access bursts during a predefined, regularly reoccurring time period called the request access slot. See column 2, lines 28-45.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Jagannathan whose telephone number is 571-272-3163. The examiner can normally be reached Monday-Friday 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3163.

Art Unit: 2666

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJ


FRANK DUONG
PRIMARY EXAMINER